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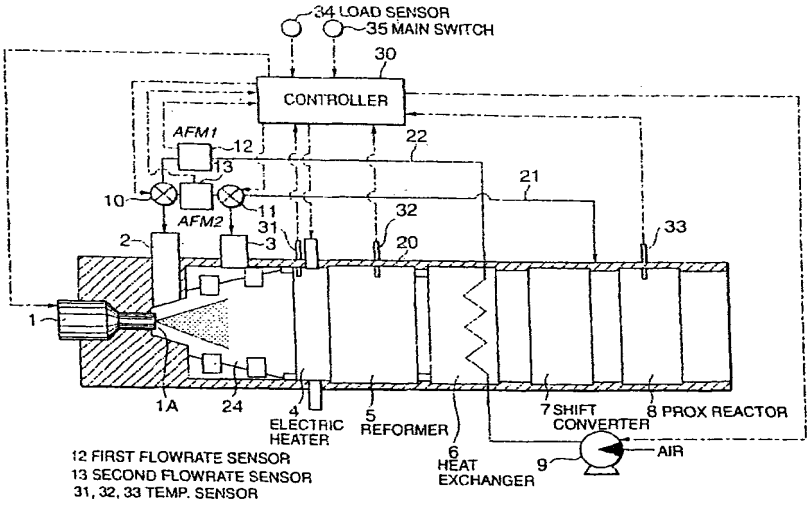
(54) Title: FUEL REFORMING DEVICE



(57) Abstract: A fuel reforming device generates reformate gas containing a large amount of hydrogen by reforming a mixture of a hydrocarbon fuel and air, and supplies the reformate gas to a fuel cell stack (14). The fuel reforming device comprises a fuel injector (1) injecting the hydrocarbon fuel into a fuel mixing chamber (24), first and second air distribution valves (10, 11) supplying air to the fuel mixing chamber (24), and a reformer (5) which generates reformate gas by making the air-fuel mixture supplied from the fuel mixing chamber (24) react in the presence of a reforming catalyst. The reformer (5) is also provided with an oxidation catalyst. When the fuel reforming device starts operating, a large amount of air is supplied from the first and second air distribution valves (10, 11) to the fuel mixing chamber (24), and the oxidation catalyst in the reformer (5) promotes oxidation of the air-fuel mixture to warm up the reformer (5).

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ABSTRACT

A fuel reforming device generates reformate gas containing a large amount of hydrogen by reforming a mixture of a hydrocarbon fuel and air, and supplies the reformate gas to a fuel cell stack (14). The fuel reforming device comprises a fuel injector (1) injecting the hydrocarbon fuel into a fuel mixing chamber (24), first and second air distribution valves (10, 11) supplying air to the fuel mixing chamber (24), and a reformer (5) which generates reformate gas by making the air-fuel mixture supplied from the fuel mixing chamber (24) react in the presence of a reforming catalyst. The reformer (5) is also provided with an oxidation catalyst. When the fuel reforming device starts operating, a large amount of air is supplied from the first and second air distribution valves (10, 11) to the fuel mixing chamber (24), and the oxidation catalyst in the reformer (5) promotes oxidation of the air-fuel mixture to warm up the reformer (5).